

Remarks

Applicants respectfully request reconsideration of the present application in view of the above amendments and following remarks. Claims 23, 34, 35, 41, 44, 46 and 47 have been amended and claims 48 and 49 have been added. Claim 21 has been cancelled. Therefore, claims 2-5, 7, 8, 10-20, 23 and 26-49 are pending in the present application.

Claims 23, 35, 46 and 47 have been rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 5,957,114 to Johnson et al. ("the Johnson reference"). Applicants respectfully traverse this rejection.

Amended claim 23 is directed to a hydrocarbon emissions scrubber including an elongate housing, at least two scrubber elements, and at least one foam flow diffuser. The housing defines a channel for a flow of fluid through the housing. The at least two scrubber elements each have an elongate body and are disposed within the housing and in fluid communication with the channel. Further, each of the at least two scrubber elements are disposed in series relative to a flow of air through the channel such that air flows sequentially through the at least two scrubber elements for filtering bleed emissions from the flow of fluid through the channel. Each of the at least one flow diffuser is disposed within the housing at a respective end of the body.

None of the references of record teach or suggest a hydrocarbon emissions scrubber having at least one foam flow diffuser as recited in amended claim 23. While the Johnson reference includes first and second hydrocarbon adsorbing zones (80, 86) disposed within a purging canister (56), the Johnson reference does not

disclose a flow diffuser. See *Final Office Action*, pg. 6, ¶ 8. Even if U.S. Patent No. 3,964,875 to Chang et al. ("the Chang reference") is combined with the Johnson reference, which Applicants believe to be improper, the Chang reference discloses a pinwheel-type deflector (20) that is positioned in alignment with an inlet opening (40) of the diffuser (34). The Chang reference does not disclose a foam flow diffuser as recited in amendment claim 23. Since the Johnson and Chang references fail to teach or suggest all of the limitations included in amended claim 23, Applicants request that the rejection of claim 23 be withdrawn.

Amended claim 35 is directed to an evaporative emissions assembly including an evaporative canister, a hydrocarbon emissions scrubber and a conduit. The evaporative canister includes a first housing defining a purge port, a vent port and a vapor inlet port, wherein a sorbent material is disposed within the evaporative canister. Each of the purge port, the vent port, and the vapor inlet port are in fluid communication with the sorbent media. The hydrocarbon emissions scrubber includes a second housing and a scrubber element, wherein the second housing defines a channel for the flow of fluid therethrough. The scrubber element is disposed within the second housing and is in fluid communication with the channel. Further, the scrubber element is configured for filtering bleed emissions from fluid flowing through the channel. The conduit fluidly interconnects the channel of the second housing and the vent port of the evaporative canister.

None of the references of record teach or suggest an evaporative emissions assembly including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in amended

claim 35. The Johnson reference merely discloses a single evaporative emission canister having first and second hydrocarbon adsorbing zones (80, 86) positioned within a single housing between a fuel tank (52) and an vent port (68) for filtering hydrocarbons being emitted from the system. However, the Johnson reference fails to disclose a hydrocarbon emissions scrubber positioned in a second housing downstream of the second hydrocarbon adsorbing zone (86) for filtering bleed emissions flowing through the assembly. As such, Applicants request that the rejection of claim 35 be withdrawn.

Amended claim 46 is directed to an evaporative emissions control system including an evaporative canister and a hydrocarbon emissions scrubber. The evaporative canister includes a first housing defining a vent port and the hydrocarbon emissions scrubber defines a channel for a flow of fluid therethrough, wherein the channel is in fluid communication with the vent port. Further, the scrubber element includes a second housing and is disposed in fluid communication with the channel. The scrubber element is configured for filtering bleed emissions from the flow of fluid through the channel. Amended claim 47 includes similar limitations to amended claim 46 except that the evaporative emissions control system is used in a motor vehicle.

For at least the same reasons set forth with respect to claim 35, none of the references of record teach or suggest an evaporative emissions control system including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in amended claims 46

and 47. Therefore, Applicants request that the rejection of claims 46 and 47 be withdrawn.

Claims 21, 23, 35, 46 and 47 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,237,574 to Jamrog et al. ("the Jamrog reference"). Claim 21 has been cancelled, therefore the rejection of this claim is moot. Applicants respectfully traverse the rejection of the remaining claims.

The Jamrog reference does not teach or suggest a hydrocarbon emissions scrubber including a flow diffuser disposed within a housing at a respective end of the body as recited in amended claim 23. The Jamrog reference is similar in many respects to the Johnson reference except the first hydrocarbon adsorption zone (80) in the Jamrog reference includes smaller and larger diameter portions (79, 86). See Col. 4, lines 48-67; Col. 5, lines 1-3. In rejecting the claims, the Examiner stated that the frusto-conical sections (78, 78') teach the flow diffusers included in the present invention. See *Final Office Action*, pg. 3, ¶ 4. However, the frusto-conical sections (78, 78') identified in the Jamrog reference are positioned intermediate or between the ends of the hydrocarbon adsorbing zones (80, 85), not at a respective end of the elongate body of the scrubber element as recited in claim 23. Therefore, the invention included in amended claim 23 is not taught or suggested by the Jamrog reference.

The Jamrog reference does not teach or suggest an evaporative emissions assembly including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in amended claim 35. As with the Johnson reference, the Jamrog reference discloses a single

evaporative emission canister having first and second hydrocarbon adsorbing zones (80, 85) positioned within a first housing between a fuel tank (52) and an vent port (68) for filtering hydrocarbons being emitted from the system. However, the Jamrog reference fails to disclose a hydrocarbon emissions scrubber positioned in a second housing downstream of the second hydrocarbon adsorbing zone (85) for filtering bleed emissions flowing through the assembly. As such, Applicants request that the rejection of claim 35 be withdrawn. Claims 46 and 47 include a similar limitation and are also not taught or suggested by the Jamrog reference for at least the same reason set forth above.

Claims 10-13 and 36-40 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Johnson reference in further view of U.S. Patent No. 5,914,294 to Park et al. ("the Park reference").

Claims 10-13 depend either directly or indirectly from independent claim 23. Therefore, claims 10-13 include all of the limitations included in claim 23. As stated above, the Johnson reference does not teach or suggest a hydrocarbon emissions scrubber having at least one foam flow diffuser as recited in amended claim 23. The Park reference fails to add anything to the Johnson reference except to provide a method for forming an adsorptive monolith. Since the combination of the Johnson and Park references fail to teach all the limitations included in claim 23, Applicants request that the rejection of claims 10-13 be withdrawn.

Claims 36-40 depend either directly or indirectly from independent claim 35. Therefore, claims 36-40 include all of the limitations included in claim 35. As stated above, the Johnson reference does not teach or suggest an evaporative emissions

assembly including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in claim 35.

The Park reference fails to add anything to the Johnson reference except to provide a method for forming an adsorptive monolith. Since the combination of the Johnson and Park references fail to teach all the limitations included in claim 35, Applicants request that the rejection of claims 36-40 be withdrawn.

Claims 10-13, 26-29, 34, 36-40 and 45 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Jamrog reference in view of the Park reference.

Claims 10-13 depend either directly or indirectly from independent claim 23. Therefore, claims 10-13 include all of the limitations included in claim 23. As stated above, the Jamrog reference does not teach or suggest a hydrocarbon emissions scrubber including a flow diffuser disposed within a housing at a respective end of the body as recited in amended claim 23. The Park reference fails to add anything to the Jamrog reference except to provide a method for forming an adsorptive monolith. Since the combination of the Jamrog and Park references fail to teach all the limitations included in claim 23, Applicants request that the rejection of claims 10-13 be withdrawn.

Amended claim 34 is directed to an evaporative emissions assembly including a housing, a scrubber element, and at least one foam flow diffuser. The housing defines a purge port, a vent port and a vapor inlet port. A sorbent material is disposed within the housing, and each of the purge port, the vent port, and the vapor inlet port is in fluid communication with the sorbent media. The scrubber

element is disposed within the housing, and the scrubber element is in fluid communication with the vent port. The scrubber element is disposed intermediate the vent port and the sorbent material such that a flow of air into and out of the vent port flows through the scrubber element. The scrubber element includes an elongate body including first and second ends. The body defines a plurality of passageways for the flow of fluid therethrough from the first end to the second end. The plurality of passageways are one of coated with and constructed of a sorbent material, wherein the sorbent material is adsorptive of hydrocarbons. Each of the at least one foam flow diffuser is disposed within the housing at a respective end of the body of the scrubber element.

The Jamrog reference does not teach or suggest an evaporative emissions assembly including at least one foam flow diffuser disposed within a housing at a respective end of the body as recited in amended 34. In rejecting the claims, the Examiner stated that the frusto-conical sections (78, 78') teach the flow diffusers included in the present invention. See *Final Office Action*, pg. 3, ¶ 4. However, the frusto-conical sections (78, 78') identified in the Jamrog reference are positioned intermediate or between the ends of the hydrocarbon adsorbing zones (80, 85), not at a respective end of the elongate body of the scrubber element as recited in claim 34. The Park reference fails to add anything to the Jamrog reference except to provide a method for forming an adsorptive monolith. Therefore, the invention included in amended claim 34 is not taught or suggested by the Jamrog and Park references. As claims 26-29 depend from claim 34, these claims are not taught or

suggested by the references of record for at least the same reasons set forth with respect to claim 34.

Claims 36-40 and 45 depend either directly or indirectly from independent claim 35. Therefore, claims 36-40 and 45 include all of the limitations included in claim 35. As stated above, the Jamrog reference does not teach or suggest an evaporative emissions assembly including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in amended claim 35. The Park reference fails to add anything to the Johnson reference except to provide a method for forming an adsorptive monolith. Since the combination of the Jamrog and Park references fail to teach all the limitations included in claim 35, Applicants request that the rejection of claims 36-40 and 45 be withdrawn.

Claims 21, 26-29, 34 and 45 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Johnson reference in view of the Park reference, and in further view of U.S. Patent No. 3,964,875 to Chang et al. ("the Chang reference"). Claim 21 has been cancelled, therefore the rejection of this claim is moot.

None of the references of record teach or suggest an evaporative emissions assembly including at least one foam flow diffuser as recited in amended claim 34. While the Johnson reference includes first and second hydrocarbon adsorbing zones (80, 86) disposed within a purging canister (56), the reference does not disclose a flow diffuser. See *Final Office Action*, pg. 6, ¶ 8. The Park reference also fails to teach a flow diffuser. Even if the Chang reference is combined with the Johnson and Park references, which Applicants believe to be improper, the Chang reference

merely discloses a pinwheel-type deflector (20) that is positioned in alignment with an inlet opening (40) of the diffuser (34). The Chang reference does not disclose a foam flow diffuser as recited in amendment claim 23. Since the Johnson, Park, and Chang references fail to teach or suggest all of the limitations included in amended claim 23, Applicants request that the rejection of claim 23 be withdrawn. As claims 26-29 depend from claim 34, these claims are not taught or suggested by the references of record for at least the same reasons set forth with respect to claim 34.

Claim 45 depends indirectly from independent claim 35, and therefore includes all of the limitations of claim 35. The Johnson reference does not teach or suggest an evaporative emissions assembly including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in amended claim 35. The Johnson reference discloses a single evaporative emission canister having first and second hydrocarbon adsorbing zones (80, 86) positioned within a single housing between a fuel tank (52) and an vent port (68) for filtering hydrocarbons being emitted from the system. However, the Johnson reference fails to disclose a hydrocarbon emissions scrubber positioned in a second housing downstream of the second hydrocarbon adsorbing zone (86) for filtering bleed emissions flowing through the assembly. The Park and Chang references also fail to disclose this particular feature. Since the Johnson, Park and Chang references fail to teach an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in claim 35, claim 45 is also not taught or suggested by this combination of references for at least the same reason set forth with respect to claim 35.

For at least the reasons set forth above, the combination of the Johnson, Park and Chang references do not teach or suggest all of the limitations included in claims 26-29, 34 and 45. Therefore, Applicants request that the rejection of claims 26-29, 34 and 45 be withdrawn.

Claims 14-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over either the Johnson or Jamrog references in view of the Park reference, and in further view of U.S. Patent No. 4,386,947 to Mizuno et al. ("the Mizuno reference").

As stated above, the Johnson and Jamrog references do not teach or suggest a hydrocarbon emissions scrubber including at least one foam flow diffuser, each of the at least one flow diffuser being disposed within the housing at a respective end of the body as recited in claim 23. The Park reference fails to add anything to the Johnson and Jamrog references except to provide a method for forming an adsorptive monolith. Further, the Mizuno reference fails to add anything to the Johnson and Jamrog references except an apparatus for adsorbing fuel vapor. As with the Johnson and Jamrog references, the Park and Mizuno references fail to teach or suggest the limitations of claim 23 that were lacking in the Johnson and Jamrog references, specifically, at least one foam flow diffuser being disposed within the housing at a respective end of the body. Since claims 14-16 depend either directly or indirectly from claim 23, these claims are also not taught or suggested by the cited references for at least the same reasons set forth with respect to claim 23.

Claims 17-20, 30-33 and 41-44 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over either the Johnson or Jamrog references in view of the

Park reference, and in further view of U.S. Patent No. 6,097,011 to Gadkaree et al. ("the Gadkaree reference").

Claims 17-20 depend either directly or indirectly from independent claim 23, and therefore include all of the limitations included in claim 23. As stated above, the Johnson and Jamrog references do not teach or suggest a hydrocarbon emissions scrubber including at least one foam flow diffuser, each of the at least one flow diffuser being disposed within the housing at a respective end of the body as recited in claim 23. The Park reference fails to add anything to the Johnson and Jamrog references except to provide a method for forming an adsorptive monolith. Furthermore, the Gadkaree reference is directed to a electrically heatable activated carbon body and fails to teach or suggest the limitations of claim 23 that were lacking in the Johnson and Jamrog references. Since the combination of the Johnson, Jamrog, Park and Gadkaree references fail to teach all the limitations included in claim 23, Applicants request that the rejection of claims 17-20 be withdrawn.

Claims 30-33 depend either directly or indirectly from independent claim 34, and therefore include all of the limitations included in claim 34. As stated above, the Johnson and Jamrog references do not teach or suggest an evaporative emissions assembly including at least one foam flow diffuser, each of the at least one flow diffuser being disposed within the housing at a respective end of the body as recited in claim 34. The Park and Gadkaree references do not appear to add anything to the Johnson and Jamrog references in regard to a flow diffuser. Since the Park and Gadkaree references fail to teach all the limitations in claim 34 that were lacking in

the Johnson and Jamrog references, Applicants request that the rejection of claims 30-33 be withdrawn.

Claims 41-44 depend from independent claim 35. Therefore, claims 41-44 include all of the limitations included in claim 35. The Johnson and Jamrog references do not teach or suggest an evaporative emissions assembly including an evaporative canister including a first housing and a hydrocarbon emissions scrubber including a second housing as recited in claim 35. The Park and Gadkaree references do not relate to an evaporative canister and a hydrocarbon emissions scrubber positioned in first and second housings, respectively. Since the Park and Gadkaree references fail to teach all the limitations in claim 35 that were lacking in the Johnson and Jamrog references, Applicants request that the rejection of claims 41-44 be withdrawn.

Applicants respectfully acknowledge the allowance of claims 2-5, 7 and 8.

Newly added independent claim 48 is directed to a hydrocarbon emissions scrubber including an elongate housing, at least two scrubber elements, and at least one flow diffuser. The elongate housing defines a channel for a flow of fluid through the housing. The at least two scrubber elements each have an elongate body and are disposed within the housing and in fluid communication with the channel. Each of the at least two scrubber elements are disposed in series relative to a flow of air through the channel such that air flows sequentially through the at least two scrubber elements for filtering bleed emissions from the flow of fluid through the channel. The at least one flow diffuser is disposed within the housing at a respective

end of the body, wherein the at least one flow diffuser is disposed in contact with at least one of the scrubber elements.

Applicants submit that the references of record do not teach or suggest a hydrocarbon emissions scrubber including at least one flow diffuser that is disposed in contact with at least one of the scrubber elements as recited in claim 48.

Applicants request that claim 48 be allowed.

Newly added independent claim 49 is directed to an evaporative emissions assembly including a housing, a scrubber element, and at least one flow diffuser. The housing defines a purge port, a vent port and a vapor inlet port. A sorbent material is disposed within the housing, each of the purge port, the vent port, and the vapor inlet port is in fluid communication with the sorbent media. The scrubber element is disposed within the housing and is in fluid communication with the vent port. The scrubber element is disposed intermediate the vent port and the sorbent material such that a flow of air into and out of the vent port flows through the scrubber element. Further, the scrubber element includes an elongate body having a first and second end, the body defines a plurality of passageways for the flow of fluid therethrough from the first end to the second end. The plurality of passageways are one of coated with and constructed of a sorbent material, the sorbent material being adsorptive of hydrocarbons. The at least one flow diffuser is disposed within the housing at a respective end of the body of the scrubber element, wherein the at least one diffuser is disposed in contact with the scrubber element.

Applicants submit that the references of record do not teach or suggest an evaporative emissions assembly including at least one diffuser that is disposed in

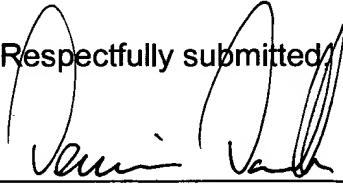
contact with the scrubber element as recited in claim 49. Thus, Applicants request that claim 49 be allowed.

Conclusion

In light of the foregoing, Applicants submit that claims 2-5, 7, 8, 10-20, 23 and 26-49 are in condition for allowance and such allowance is respectfully requested. Should the Examiner feel that any unresolved issues remain in this case, the undersigned may be contacted at the telephone number listed below to arrange for an issue resolving conference.

The Commissioner is hereby authorized to charge the \$176.00 fee required under 37 C.F.R. § 1.16(b) for the two additional independent claims added to the present patent application, and any other fees that may have been overlooked, to Deposit Account No. 10-0223.

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Respectfully submitted,


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